



ABSTRACT OF THE DISCLOSURE

There is provided a method for transferring novel genetic materials into maize by crossing (*Tripsacum* X *perennial Zea diploperennis*) with maize. This invention thus relates to the novel genetic materials in the seed, plants produced by the seed and/or tissue culture, variants, mutants, modifications, and cellular and molecular components of *Tripsacum-Z. diploperennis* hybrids and of hybrids between *Tripsacum-Z. diploperennis* and maize. In particular this invention is directed to the ability to transfer nucleotide sequences and novel alleles into maize for genetic analyses and selection of valuable agronomic traits including: resistance to insects and diseases including European corn borer and aflatoxin; tolerance to drought, cold, flooding, corn rootworm, acid soils, low nitrogen; apomixis, totipotency, perennialism and ability to produce double haploids; adaptation to adverse soil conditions; more extensive root systems with aerenchyma and strong capacity for regrowth; enhanced grain quality and nutrition.